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U.S. Application Serial No. 09/748,530
Sakai et al.
Examiner C. Cook

Examiner Cooke: Pursuant to our conversation of today,
attached is a copy of our proposed amended claims.
Thank you for your consideration. *Jasper Dockrey*

Patent Application Serial No. 09/748,530
Sakai et al.

Draft Proposed Amendment

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Search

5. (Presently amended) A method for repairing a metallic pattern on a substrate, said method comprising steps of:
- applying a metallic organic compound to a defect in a metallic pattern overlying said substrate; and
 - subjecting said metallic organic compound to a provisional and a main baking process using a laser to deposit a metallic thin film in said defect,
 - wherein said provisional baking process comprises increasing an output of said laser from about 0 to a first predetermined value, and holding said output at said first predetermined value for a predetermined time, whereby solvent contained in said metallic organic compound is dissipated, and
 - wherein said main baking process comprises increasing said output of said laser to a second predetermined value and holding said output at said second predetermined value for a predetermined time, whereby metallic components are deposited.
6. (Presently amended) A method for repairing a metallic pattern on a substrate according to claim 5, wherein said laser comprises a semiconductor laser, and wherein infrared energy from a said semiconductor laser is used as a heat source for baking said metallic organic compound.
7. (Presently Amended) A method for repairing a metallic pattern on a substrate according to claim 6, ~~wherein the output of said semiconductor laser is increased,~~ and wherein the said method further comprises cooling said substrate is cooled thereafter after baking said metallic organic compound.
8. (Previously Amended) A method for repairing a metallic pattern on a substrate according to claim 5, further comprising a step of removing a protruding portion of a deposited metallic thin film from said metallic pattern.

14. (Original) A method for repairing a metallic pattern on a substrate according to claim 6, further comprising a step of removing a portion of a deposited metallic thin film protruding from said metallic pattern.

15. (Original) A method for repairing a metallic pattern on a substrate according to claim 7, further comprising a step of removing a portion of a deposited metallic thin film protruding from said metallic pattern.

17. (new) A method for repairing a metallic pattern on a substrate according to claim 5, wherein holding said output at said first predetermined value for a predetermined time comprises holding said output for about 24 seconds.

18. (new) A method for repairing a metallic pattern on a substrate according to claim 17, wherein said provisional baking process further comprises increasing said output of said laser from about 0 to an intermediate value and holding said output at said intermediate value for a predetermined time, wherein said intermediate value is less than said first predetermined value.

19. (new) A method for repairing a metallic pattern on a substrate according to claim 18, wherein holding said output at said intermediate value for a predetermined time comprises holding said output for about 16 seconds.

20. (new) A method for repairing a metallic pattern on a substrate according to claim 5, wherein said metallic thin film has a portion that protrudes from said metallic pattern, said method further comprising applying a laser to trim away said portion from said metallic pattern.

21. (new) A method for repairing a metallic pattern on a substrate according to claim 20, wherein applying a laser comprises applying a YAG laser.

22. (new) A method for repairing a metallic pattern on a substrate according to claim 20, wherein said substrate comprises is a glass mask.

23. (new) A method for repairing a metallic pattern on a substrate, said method comprising steps of:

providing a transfer probe and a paste plate;

pressing said transfer probe into said paste plate and transferring a predetermined amount of metal organic compound from said paste plate to said transfer probe;

moving said transfer probe to said substrate and transferring said predetermined amount of said metallic organic compound to a defect in a metallic pattern overlying said substrate;

subjecting said metallic organic compound to a provisional and a main baking process using a laser to deposit a metallic thin film in said defect,

wherein said provisional baking process comprises increasing an output of said laser from about 0 to a first predetermined value, and holding said output at said first predetermined value for a predetermined time, whereby solvent contained in said organic compound is dissipated, and

wherein said main baking process comprises increasing said output of said laser to a second predetermined value and holding said output at said second predetermined value for a predetermined time, whereby metallic components are deposited.

24. (new) A method for repairing a metallic pattern on a substrate according to claim 23, wherein providing a paste plate comprises:

providing a plate frame;

pouring said metallic organic compound into said plate frame; and

leveling off said metallic organic compound in said plate frame by applying a squeegee to said metallic organic compound.

25. (new) A method for repairing a metallic pattern on a substrate according to claim 23, wherein providing a transfer probe comprises providing a beryllium copper probe having flattened tip end.

26. (new) A method for repairing a metallic pattern on a substrate according to claim 23 further comprising locating defects in said metallic pattern, wherein said locating comprises the steps of:

providing an inspection probe and an inspection brush interconnected to an inspection circuit;

contacting a selected metallic line in said metallic pattern with said inspection probe and said inspection brush; and

sliding said inspection brush toward said inspection probe along said metallic line while monitoring a voltage in said inspection circuit.